Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~Use of a~~ A method for in-vitro testing of active substances in cells comprising at least the following steps:

a) ~~Providing~~ providing a cell culture container with an interior ~~space~~ chamber and an inside wall and with a first and second membrane system located in the interior ~~space~~ chamber, whereby a cell culture space is formed between the first and second membrane systems and the inside wall of the interior chamber;

b) ~~Providing~~ providing cells as a cell culture and a cell culture medium in the cell culture ~~chamber~~ space;

c) ~~Adding~~ adding a fluid nutrient medium to the cell culture ~~chamber~~ space and removing metabolic products from the cell culture ~~chamber~~ space by means of the first membrane system;

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d) ~~Adding~~ adding at least one gaseous medium to the cell culture ~~chamber~~ space by means of ~~a~~ the second membrane system;

e) ~~Metering~~ metering at least one active substance into the cell culture ~~chamber~~ space, with the metering taking place according to an adjusted active substance concentration-time curve; and

f) ~~Monitoring~~ monitoring cell vitality.

~~for in-vitro testing of active substances in cells.~~

2. (Currently Amended) ~~Use~~ The method according to ~~Claim~~ claim 1, ~~characterized in that~~ wherein the active substances comprise cytostatics, antibiotics, cytokines, growth factors, or antiviral agents ~~are used as active substances~~.

3. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~or 2~~, ~~characterized in that~~ wherein the cell culture comprises primary cells ~~are added as the cell culture~~.

4. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~or 2~~, ~~characterized in that~~ wherein the cell culture comprises tumor cell lines ~~are used as the cell culture~~.

5. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 4~~, ~~characterized in that~~ wherein the cell culture ~~chamber~~ space has a minimum volume of at least 0.1 ml ~~minimum~~ and a maximum volume of 5 ml ~~maximum~~.

6. (Currently Amended) ~~Use~~ The method according to ~~Claim~~ claim 5, ~~characterized in that~~ wherein the cell culture ~~chamber~~ space has a minimum volume of 0.3 ml and a maximum volume of 3.0 ml.

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7. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 6~~, ~~characterized in that~~ wherein the first membrane system comprises at least one semipermeable membrane or at least one hydrophilic microporous membrane ~~is used as the first membrane system,~~ and the second membrane system comprises at least one gas transfer membrane ~~is used as the second membrane system~~.

8. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 7~~, ~~characterized in that~~ wherein the first and the second membrane systems ~~consist of~~ comprise hollow fibers stacked in multiple layers.

9. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 8~~, ~~characterized in that a~~ wherein the cell culture container ~~is used which has~~ comprises a removable lid and ~~allows~~ the cell culture ~~to be prepared~~ is provided by adjusting ~~the~~ a desired cell density in the cell culture medium, opening the removable lid of the cell culture container, pipetting ~~the~~ a desired volume of cell suspension into the cell culture

container, and closing the removable lid of the cell culture container ~~using the lid~~ so as to close the cell culture container.

10. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 9~~, ~~characterized in the fact that~~ wherein the cell culture medium comprises RPMI 1640 ~~is used as the cell culture medium~~.

11. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 10~~, ~~characterized in that~~ wherein the cell culture space comprises at least $1 \cdot 10^5$ cells per ml ~~of cell culture space are used~~.

12. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 11~~, ~~characterized in that~~ wherein each cell is at an average distance of 0 µm to 600 µm from the closest membrane in the first and second membrane systems.

13. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 12~~, ~~characterized in that~~ wherein a fluid nutrient medium comprises RPMI 1640 ~~is used~~.

14. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 13~~, ~~characterized in that~~ wherein the gaseous medium ~~has~~ comprises a pO_2 of 0 to 160 mmHg and a pCO_2 of 0 to 115 mmHg.

15. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim ~~1 to~~ 14, ~~characterized in that~~ wherein the cell culture medium ~~contains~~ comprises a bicarbonate buffer and the pCO_2 in the gaseous medium ~~added~~ is adjusted so that the pH value of the cell culture medium is between 6.8 and 7.8.

16. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 15~~, ~~characterized in that~~ wherein ~~gaseous metabolic products are removed from the cell culture space by means of~~ the second membrane system removes gaseous metabolic products from the cell culture space.

17. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 16~~, ~~characterized in that~~ wherein the metering of the at least one ~~individual~~ active ~~substances and/or combinations of several active substances are added~~ substance comprises adding the at least one active substance on a time-staggered basis.

18. (Currently Amended) ~~Use~~ The method according to ~~one or several of Claims~~ claim 1 ~~to 17~~, ~~characterized in that~~ wherein the metering of the at least one active substance ~~dosage is added~~ comprises adding a dose of the at least one active substance to the cell culture ~~chamber~~ space directly or ~~by means of~~ through the first membrane system.

19. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 18~~, ~~characterized in that specification of~~ wherein the active substance concentration-time curve ~~takes place with the~~ is determined based on permeabilities of the first membrane system, ~~by the~~ duration of the active substance administration, and ~~by the~~ active substance concentration.

20. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 19~~, ~~characterized in that~~ wherein the cell culture container is kept at 37°C.

21. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 18~~, ~~characterized in that~~ wherein monitoring of the cell vitality ~~is monitored by means of~~ comprises measuring the presence of fluorescent dye converted from a cell vitality dye.

22. (Currently Amended) ~~Use~~ The method according to ~~Claim~~ claim 21, ~~characterized in that~~ wherein the cell vitality dye comprises Alamar Blue ~~serves as a cell vitality dye~~.

23. (Currently Amended) ~~Use~~ The method according to ~~one or more of Claims~~ claim 1 ~~to 22~~, ~~characterized in the fact~~ wherein the monitoring of cell vitality ~~is monitored using~~ comprises at least one sensor.

24. (Currently Amended) ~~Use~~ The method according to ~~Claim~~ claim 23, ~~characterized in that~~ wherein the sensor comprises a fluorescence sensor ~~is used~~.

25. (Currently Amended) ~~Device~~ A device for in-vitro testing of active substances in cells, comprising a cell culture container ~~(1)~~ suitable for collecting a cell culture in a cell culture medium with an ~~internal~~ interior chamber ~~(2)~~, ~~with~~ wherein a first ~~means for supplying~~ supply device for introducing at least one nutrient medium and a second supply device for adding at least one gaseous medium are located in the interior ~~space~~ chamber, ~~with the means each having~~ wherein each supply device has a supply side and a removal side, and ~~with~~ a cell culture space being formed between said ~~means~~ supply devices and ~~the~~ an inside wall of the interior chamber, and with the first ~~means~~ supply device in a fluid connection with the supply side connected ~~by~~ to a nutrient medium dispensing unit ~~(3) with~~ including at least one nutrient medium container ~~(4)~~, and the second ~~means~~ supply device connected in a fluid connection with the supply side connected ~~by~~ to a gas metering unit ~~(5) with~~ including at least one gas supply container ~~(6)~~, ~~characterized in that~~ wherein the cell culture ~~chamber~~ space has a volume of at most 5 ml and at least 0.1 ml, and ~~that~~ further wherein the device ~~also contains means (7), (8), (9a), (9b), and (9c)~~ comprises an active substance supply container, an active substance dispensing unit, and a line system connecting the active substance supply container with the interior chamber for supplying at least one active substance to the cell culture ~~chamber~~ space, and ~~means for creating an active substance~~ wherein the active substance dispensing unit dispenses the active substance into the cell culture space according to an adjusted active substance concentration-time curve ~~in the cell culture chamber~~.

26. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 25, ~~characterized in that~~ wherein the first ~~means is in~~ supply device includes a fluid connection on the removal side with a waste container ~~(10)~~.

27. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 25, ~~characterized in that~~ wherein the first ~~means is in~~ supply device includes a fluid connection on the removal side by a recirculation line ~~(11) with the~~ comprising at least one nutrient medium container ~~(4)~~.

28. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 27~~, ~~characterized in that~~ wherein the first ~~means consists of~~ supply device comprises at least one ~~fluid medium suitable for administration~~ membrane suitable for supplying nutrient media.

29. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25, ~~to 28 characterized in that~~ wherein the second ~~means~~ supply device ~~consists of~~ comprises at least one membrane suitable for gas exchange.

30. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 29~~, ~~characterized in that~~ wherein cell culture container ~~(1) has~~ comprises a bottom and a lid ~~which bound~~ binding the interior chamber, being ~~are~~ opposite one another, and ~~consist of~~ each comprising a transparent material.

31. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 30, ~~characterized in that~~ wherein the bottom of the cell culture container includes a heating system ~~is integrated into the bottom of cell culture container (1)~~.

32. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25, ~~to 31 characterized in that the~~ wherein the first supply device comprises at least one membrane ~~of the first means~~ that is a semipermeable membrane or a hydrophilic microporous membrane.

33. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 32~~, ~~characterized in that~~ wherein the second supply device comprises ~~the~~ at least one membrane ~~of the second means~~ that is an oxygenation membrane.

34. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 33~~, ~~characterized in that~~ wherein the first and second supply devices comprise ~~the~~ membranes ~~of the first and second means~~ that are hollow fibers.

35. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim ~~25 to~~ 34, ~~characterized in that~~ wherein the hollow fibers are stacked in several layers in the interior chamber.

36. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 35, ~~characterized in that~~ wherein the maximum distance between the hollow fibers forming each ~~means~~ supply device is between 50 ~~im~~ µm and 600 ~~im~~ µm.

37. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 36~~, ~~characterized in that~~ wherein the cell culture ~~chamber has~~ space comprises a volume of 0.3 ml to 3.0 ml.

38. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 37~~, ~~characterized in that~~ wherein the ~~means~~ supply device for adding the active substance ~~consist of~~ comprises at least one active substance supply container ~~(7)~~, at least one active substance metering device ~~(8)~~, and a system of lines ~~(9)~~ which connects the at least one active substance supply container ~~(7)~~ through ~~an~~ the at least one active substance metering ~~unit (8)~~ device directly ~~(9a)~~ or through ~~first means~~ ~~(9b)~~ the first supply device with the ~~cell culture chamber~~ cell culture space of the cell culture container ~~(1)~~.

39. (Currently Amended) ~~Device~~ The device according to ~~one or more of Claims~~ claim 25 ~~to 38~~, ~~characterized in that~~ wherein the device ~~has a means for monitoring~~ further includes a monitor for cell vitality.

40. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 39, ~~characterized in that~~ wherein the ~~means for monitoring~~ monitor for cell vitality ~~consists of~~ comprises at least one sensor.

41. (Currently Amended) ~~Device~~ The device according to ~~Claim~~ claim 40, ~~characterized in that~~ wherein the sensor ~~is~~ comprises a fluorescence sensor.

42. (Currently Amended) ~~Modular~~ A modular active substance testing system comprising at least two devices according to ~~Claims~~ claim 25 ~~to 41~~.

43. (Currently Amended) ~~Modular~~ The modular active substance testing system according to ~~Claim~~ claim 42, ~~consisting of~~ comprising 6, 24, or 96 devices ~~according to Claims 25 to 41~~.

44. (Currently Amended) ~~Use of the device according to one or more of Claims 25 to 41 or of the modular active substance testing system according to one of Claims 42 or 43 for in vitro testing of the effects of active substances on cells~~ A process for in-vitro testing of the effects of active substances on cells comprising the device according to claim 25.

45. (Currently Amended) ~~Use of the device or of the modular system according to Claim 44, characterized in that~~ The process according to claim 44, wherein the process comprises determining the influence of pharmacokinetics on cell vitality is determined.

46. (Previously Added) A process for in-vitro testing of the effects of active substances on cells comprising the modular active testing substance according to claim 42.